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BATTLESPACE AWARENESS: SOLUTIONS FOR A MULTINATIONAL PROBLEM

by

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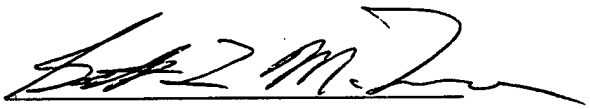
A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

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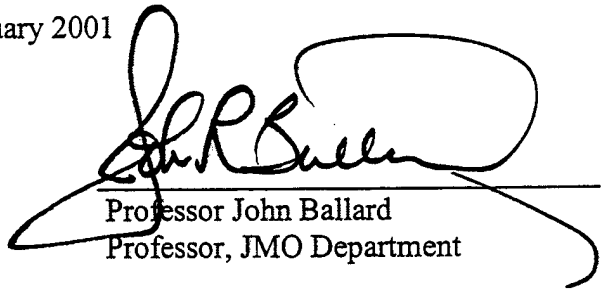

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Recent operational concepts, such as network centric warfare and operational maneuver from the sea, place an increased emphasis on information superiority and its ability to generate shared awareness and increase operational tempo. As the U.S. military incorporates these concepts into their operations and doctrine, developing shared battlespace awareness becomes increasingly necessary for the effective employment of forces.

The U.S. has made significant strides in improving battlespace awareness among its commanders by taking advantage of high technology command and control systems and developing procedures to utilize them. Yet recent multinational operations have shown reoccurring problems in developing shared battlespace awareness with our multinational partners. By considering these problems and applying steps to mitigate them, joint force commanders can improve shared battlespace awareness. Furthermore, by emphasizing these steps during joint professional military education and joint exercises, and applying them during multinational operations the U.S. will improve the effectiveness of its multinational operations.

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Battlespace Awareness

Before discussing issues regarding battlespace awareness, a common definition needs to be presented. The Department of Defense Dictionary defines the battlespace as "the environment, factors, and conditions which must be understood to successfully apply combat power, protect the force, or complete the mission. This includes the air, land, sea, space, and the relevant enemy and friendly forces, facilities, weather, terrain, the electromagnetic spectrum, and information environment within the operational areas and areas of interest."[1] Others have described battlespace as, "mobile and malleable, shaped and bounded by where and when a commander places his forces, weapons, and sensors and by what the combat

effects of those assets are intended to be."[2] From these definitions it is clear that battlespace includes much more that simply a list of forces or units. It includes a nearly limitless number of items and factors that cannot be completely measured.

For a commander to make use of these items and factors, it is necessary to conceptualize them in a manner useful for military decision making; this is called developing battlespace awareness. Thus, battlespace awareness is the intellectual process of understanding the battlespace, the perceived or intended actions of the forces within it, and the anticipated effects of those forces. In order to develop unity of effort, the commander must share this awareness of the battlespace with subordinate commanders and staffs. Developing shared battlespace awareness does not eliminate uncertainty, but instead gives commanders a similar interpretation or understanding and enables changes in the perception of operational activities to be clearly communicated among the commanders thus maximizing unity of effort. This paper will discuss issues of battlespace awareness within the framework of operational art and therefore limit the discussion to the level of joint force commanders, their component commanders, and associated multinational commanders.

Admiral Jay Johnson, former Chief of Naval Operations, has stated, "The Navy's vision for network centric warfare. . .must take into account the broader requirement for interoperability with our coalition partners around the world."[3] This statement points to a problem that is much broader than just interoperability—the ability to share battlespace awareness in multinational operations. Multinational warfare is not a new concept. It has been an enduring feature of European wars throughout much of the 18th, 19th and 20th centuries.[4] The vast majority of recent, current, and likely future operations and exercises are multinational. "History shows us alliances and coalitions—however difficult and exacting

they may be—are essential organizations to the politics of states."[5] A list of past major operations—Allied Force, Stabilize, Restore Hope, Uphold Democracy, Desert Shield/Storm—shows that we typically act as part of a coalition or alliance. Both coalitions and alliances are multinational operations, and, although alliances have a greater potential for reducing problems of battlespace awareness because of their more permanent nature, both coalitions and alliances share similar difficulties in this realm.

Command Structures

Multinational operations may employ several different command structures each having its own effects on battlespace awareness. Typically, either a parallel or lead nation command structure is used in multinational operations. A combined staff may also be formed to control the forces. In a parallel command structure, member nations maintain control of their own forces. Each nation or group of similar nations has its own commander reporting to their national command authority. There is no single multinational commander designated and thus there is weak unity of command. (See Figure 1) In the second command

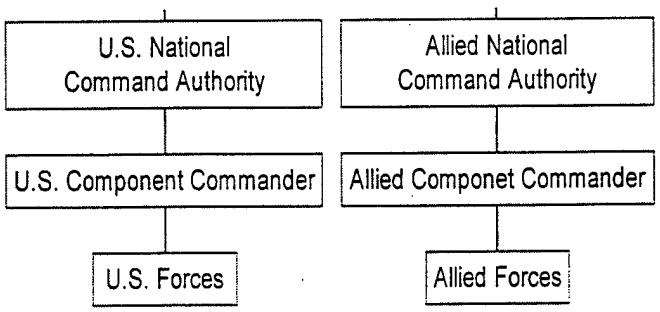

Figure 1 - Parallel Command Structure

structure, lead nation, one nation is assigned the lead role and directs the actions of all the assigned forces.[6] (See Figure 2) A third type of command structure is a combined staff which may be formed to control alliances or long standing coalitions. Combined staffs

consist of personnel from all or most of the multinational partners. These personnel are distributed throughout the staff to create a truly multinational organization.

A parallel command structure is often the organization of choice and the starting point for a multinational response to a crisis because there is not adequate time to develop an overall multinational command.[7] Parallel command relies on coordination rather than direct control and thus there is no method to direct reporting and communications procedures that would define how information should flow between these multinational commanders.

Because of this lack of unity, parallel command does not easily facilitate shared battlespace awareness. The information flow needed to develop a single perception of the battlespace from which all the commanders can reference and make decisions rarely occurs. A parallel command structure was used during Operation Desert Shield/Storm when U.S., British, and French forces were under the control of a U.S. commander and Arab forces were under the control of a Saudi Arabian commander. The Arab Joint Forces Commander, General Khaled Bin Sultan, described parallel command, "However close two allies might be, there is always a certain jockeying for advantage and always, in my experience, a measure of information which each side keeps to itself."[8] It is this withholding of information, without a singular authority to direct otherwise, that most directly degrades developing shared battlespace awareness in a parallel command structure.

Although fairly common today, lead nation command has only been used since World War I.[9] Lead nation command facilitates shared battlespace awareness through the ability of a single commander to direct information flow throughout the entire force. This ability to direct should improve shared battlespace awareness, but other factors can detract from this ability. Because the lead nation staff is accustomed to commanding and controlling its own

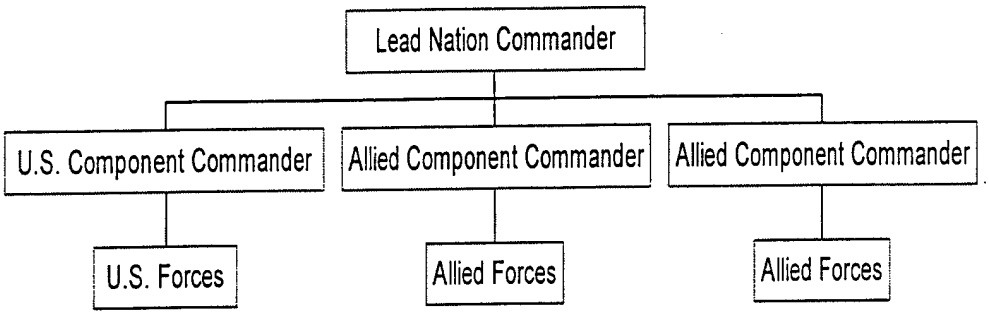

Figure 2 - Lead Nation Command Structure

forces, it generally will share battlespace awareness with its own nation's forces. However, exactly because the majority of the forces are from the lead nation, other nation's forces often receive only limited concern and inclusion in information issues and procedures which results in poor sharing of battlespace awareness.

A lead nation command structure was used during Operation Allied Force. The U.S. Commander and Chief of European Command established a U.S. led Joint Task Force (JTF) instead of using the NATO command structure already in place. This new JTF operated primarily at a U.S.-only classification level and shared little information with the multinational partners.

Finally, combined staffs have the advantage of representing the battlespace awareness requirements of all the forces within a single staff and thus have the best potential for developing shared battlespace awareness with their subordinate commands. A combined staff exists in both NATO and Korea and is the preferred method of directing multinational operations, but a combined staff takes time to develop. "A truly combined joint staff has never rapidly deployed into an immature theater as the lead element to coordinate military operations."[10] Combined staffs require operations to be planned and conducted at a

"multinational" classification level, and this limits the staff's access to information with higher classifications.

Some would argue that a command structure with the ability to direct reporting and command and control (C2) procedures is not a prerequisite to developing battlespace awareness. However, in the increasingly technologically complex C2 structures of today's operations, shared battlespace awareness does not simply occur. A detailed and centrally directed plan for its development is required in order to coordinate all the various systems and procedures which forces bring to an operation.

Security Issues

Regardless of the command arrangements, multinational operations create security concerns and restrictions that hinder the sharing of information. On a day-to-day basis, the majority of the U.S. military conducts operational planning and execution at a U.S.-only classification level. The challenge in multinational operations is to overcome this habit. The U.S. National Disclosure Policy dictates what information can be shared with our multinational partners and how that information is to be released. In many situations, the crisis is not of significant concern to risk the disclosure of sensitive U.S. information sources. The ability of commanders to receive permission to release information to multinational partners is exacerbated by the fact that "[m]ilitary coalitions may include partners whose reliability is stipulated on the threat at hand and will not last beyond the resolution of the contingency."[11] Valid concerns that our partner today may be our enemy or the friend of our enemy tomorrow prevent the release of most U.S.-only information. "Security-related restrictions on every aspect of information management work in direct conflict with the goals of efficiency, interoperability, and speed of delivery, to name a few."[12]

When operating as a U.S. lead nation command, the commander will likely choose to operate primarily at the U.S.-only classification level. Since many of the U.S. information sources, particularly intelligence sources, are restricted to only U.S. personnel, the commander has more information with which to make decisions. However, because some of the subordinate commands are multinational and cannot be given access to U.S.-only information, it is quite difficult to develop a fully shared understanding of the battlespace with those multinational partners.

Since most combined staffs are required to operate at the "multinational" classification level, they have very limited access to U.S.-only information that may be needed to make timely and accurate decisions. In some case, U.S.-only areas or cells are created within the staff to allow some access to U.S.-only information. This restricted access causes divisions within the combined staff and subordinate commands by creating an "inner circle" of U.S. personnel and preventing full sharing of battlespace awareness.

Even when combined staffs already exist, it is sometimes favorable to create a separate U.S.-only staff which can access all the available information. For example, during Operation Allied Force a separate U.S.-only JTF was created to allow planners access to U.S.-only information and prevent its release to multinational partners.

Methods of Command and Control

Differences in C2 methods and systems slow information flow and degrade the commander's ability to develop shared battlespace awareness. As the U.S. continues to develop more complex and technologically advanced C2 systems, our multinational partners are hard pressed to keep up. C2 systems interoperability problems are rapidly creating a technology gap over which information cannot flow. In reviewing Kosovo operations, the

Chairman of NATO's Military Committee, German General Klaus Naumann noted, "at the moment, we can still cope with the interoperability gap, but you see the writing on the wall and if the trends continue in the way they are visible right now and no corrective action is taken, then we will see a gap in five years time, which will give us difficulties in terms of interoperability."[13]

When creating a combined staff, U.S. C2 systems that normally operate at the U.S.-only level must either be reconfigured to operate at a "multinational" level, no longer having access to the main U.S.-only network, or must be physically segregated from multinational staff members and forces. Once C2 systems are separated into U.S.-only and "multinational" networks, dissemination between the two becomes a manual process. This manual dissemination of information slows operational tempo and creates information backlogs between U.S. and multinational commands. During high tempo operations this dissemination cannot keep up with the information flow and shared battlespace awareness degrades.

Beyond the system problems are procedural problems. The lack of common C2 procedures and staff battle rhythms further complicate the information flow problem. Commanders and staffs that do not share a doctrinal basis find difficulty in coping with the unfamiliar information flows and demands placed on them. During Operation Desert Shield/Storm, it took time to determine why the flow of information and intelligence products from the U.S. Corps were not reaching the French command. After some time, it was determined that the two commands simply had such different philosophies about how to develop an intelligence picture that they did not support each other. The problem eventually was corrected, but valuable time for analysis and planning had been lost.[14] Without a reliable and timely flow of information it is impossible to maintain shared battlespace awareness. To

emphasis the severity of this problem, the lack of procedures to share and exchange classified and unclassified information with coalition partners has made the list of U.S. Pacific Command's top ten JTF challenges.[15]

Information Deltas

We have seen how the separation of U.S.-only and "multinational" classifications can degrade battlespace awareness, but what about situations where information of both classifications must meet? When U.S. members of a staff must interface with multiple systems operating on various classification levels, information deltas and information overload affect the development of battlespace awareness. Shared battlespace awareness is based on the concept that commanders share a similar interpretation or understanding of the battlespace. If commanders cannot share information with some of their subordinate commanders, then their staffs must somehow remember the deltas in battlespace awareness and compensate for them. U.S. staff members who must access multiple systems on different classification levels have difficulty keeping track of the information being sent to them and which of the subordinate staffs knows what information.

Additionally, requirements to send the same information via multiple classification means create gaps in the force's battlespace awareness during high tempo periods. Because U.S.-only information cannot be sent via "multinational" C2 systems a delta exists between what U.S. commanders know about the battlespace and what our multinational commanders know. This problem can be clearly seen on the Combined JTF Kuwait staff. The C-3 Battle Captain must communicate with both U.S. and Kuwaiti forces, but using different networks. The Battle Captain must remember what information has been sent over which network, the deltas in battlespace awareness between the U.S. forces and the Kuwaiti forces, and take

actions to prevent those deltas from effecting operations.[16] Furthermore, friendly force information which is automatically updated in the U.S.-only systems must be manually updated in the "multinational" systems creating information flow delays. These information deltas in multinational operations make developing and maintaining shared battlespace awareness difficult.

The hope of "multi-level" security systems that allow C2 systems to operate at more than one classification level has been around for some time. Although such a system would solve many of the above problems, to date the implementation of such a system has not widely occurred. As such, these security concerns and information deltas continue to plague multinational operations.

Language and Cultural Barriers

Differences in language and culture can also prevent sharing information needed for battlespace awareness. Most of our multinational operations have involved at least one partner that did not share our language. Even when language is not an issue, differences in beliefs, customs, and approaches can create misunderstandings and poor communications. These problems can occur both within a combined staff and between commands.

The translation of language in military operations requires both an understanding of the languages and the military context in which the translations occur. Without translators that are not only fluent in both languages, but also understand the fundamentals of operational art, translations may not convey the intended meaning. Translations can subtly, but dramatically, alter key elements of information such as intent and urgency. Among U.S. forces, small differences in the meaning of terms such as "secure" or "neutralize" often cause misunderstanding. This problem increases when differences in language are added. Even

when proficient translators are available, cultural differences can increase the problem when there are no equivalent concepts to translate into. Some cultures lack concepts for describing urgency or sequencing in the same way Western cultures use these concepts. It is not a case of the multinational commanders disagreeing with the directions they receive or being unwilling to carry them out, but instead it is an issue of simply not clearly understanding what task they are to accomplish.

These problems can be seen each year during Exercise Ulchi-Focus Lens in Korea. Adequate numbers of translators with sufficient military experience to properly convey the information is a reoccurring shortfall. Translation backlogs occur and the original intent is sometimes changed.[17] Similarly, during Desert Storm translators had to be recruited from Arabic speakers living in the U.S. Many of these ad hoc translators had little or no military training. These language and cultural differences add another layer of difficulty to developing shared battlespace awareness.

Perception Problems

Even when language and culture do not combine to cause problems, limits discussed earlier that prevent the sharing of U.S.-only information can result in the perception that our multinational partners are not trusted. When multinational partners are not privy to the decision making process because of security concerns, it is only natural that perceptions of mistrust develop.

This perception that information is being withheld can contribute to reciprocal actions from multinational partners. This reciprocal action further increases the information deltas and fractures shared battlespace awareness. During Operation Desert Shield/Storm

suspicions and misunderstanding between the French and the U.S., who had fought side by side in two wars, took time to subside.[18]

Results of Problems

All of these problems affect the availability, timeliness, reliability, and quality of the information required to develop a shared understanding of the battlespace and to coordinate and deconflict operations within that battlespace. Sound decision making is based on accurate and timely information. Conversely, a shortfall leads to indecision or poor decision making. In some cases, this simply results in a reduction of operational tempo as information catches up with operations. However, in the extreme, lack of shared battlespace awareness often results in excessive casualties and fratricide.

It could be argued that a superior commander may not need to "develop" battlespace awareness, but instead through training, experience or "military genius"[19] will simply "know" the situation. While this may be true, a commander's ability to visualize the battlespace does not substitute for the need to share that visualization with other commanders.

Steps to Improve Battlespace Awareness

Each of the aforementioned problems detracts from shared battlespace awareness and although they cannot be entirely eliminated, they can be mitigated. To reduce the effects of these problems a multinational joint force commander needs to consider several steps. First, the commander must determine early in the planning what type of command structure will be used and which commanders must share battlespace awareness. The determination of the type of command structure may be beyond the control of the commander; instead dictated by

political or national concerns. Nevertheless, the commander has a responsibility to build the most efficient command structure for the situation.

Second, the commander must determine how the staff will be organized to operate effectively and how command and control will be exercised. The staff's composition greatly influences the ability or inability to command the forces that are assigned, and its development should not be left to chance. As such, staff composition will affect the ability to develop shared battlespace awareness.

Third, the commander must determine the subordinate, adjacent and higher elements and commands that must share battlespace awareness. These will include forces outside the commander's direct control, as well as supporting commands and assigned commands. By defining those elements and commands that must share battlespace awareness, the commander has taken the first crucial step towards achieving it. This list of commands will change as operations progress and should be continuously refined as operations progress and the force changes.

Fourth, the commander needs to request, receive, and then evaluate the feasibility of the disclosure policy that will dictate how information can be shared. Since disclosure is a national policy decision, which takes time to develop, the disclosure policy should be requested early in the crisis. Once the disclosure policy is received, the commander must consider the effects it will have on planning and operations. If the disclosure policy is restrictive to the point of reducing operational effectiveness, the commander must advise his seniors of these effects and may request either special augmentation or a reconsideration of the disclosure policy to mitigate these adverse effects. A restrictive disclosure policy may be

somewhat mitigated by the addition of personnel trained in the screening and disclosure of information.

Fifth, with the disclosure policy and command relationships in mind, the commander must then assess the classification level that his or her staff will primarily operate at and develop a plan to make the required information available at that level. If the commander chooses a combined staff, then it must operate primarily at a "multinational" level. If the commander instead decides to operate at a U.S.-only level, then the staff must determine how it will disclose appropriate information to multinational commanders it will operate with. In either case, a detailed practical and well understood disclosure plan must be developed and continuously refined. This disclosure plan must address both automated and manual disclosure methodologies and ensure that adequate personnel are in place to effect the required disclosure.

During Operation Desert Thunder, the early deployment of foreign disclosure experts from U.S. Central Command resulted in a frank exchange of intelligence among all the coalition partners and an intelligence foreign disclosure standing operating procedure for Combined JTF Kuwait.[20] However, the lack of similar disclosure experts and standing operating procedures to adequately support the operational planning slowed the flow of planning information to the coalition partners.[21]

The commander must develop a plan for the employment of teams and elements required to affect translation, coordination, and communications between commanders and their staffs. This is perhaps the most important step towards improving shared battlespace awareness. At the same time it demands high numbers of trained personnel which are often in short supply. In a multinational command with language differences, requirements for

translators need to be identified early and sourced quickly. A plan for the development of an adequate base of translators and foreign area experts to effect liaison is beyond the scope of this paper, but the need for such a plan can be clearly seen.

In a parallel command structure, establishing a coalition coordination center can dramatically assist in the development of shared battlespace awareness. In a lead nation command structure, the commander should require the use of robust liaison teams and coordination elements between higher, adjacent, and lower headquarters. "[T]here is no alternative but to determine where the critical nodes of multilateral contact occur and position translator liaison teams equipped with communications systems that expedite cross-communications."[22] The U.S. Central Command has mandated the use of coalition coordination centers to improve coordination between multinational commanders.[23]

The Way Ahead

Each of the problems discussed can be mitigated, but without an awareness of these issues commanders and staffs will not be prepared to deal with them. By emphasizing these steps during joint professional military education we will train a generation of commanders well versed in these issues and ready to overcome these problems. Through frequent inclusion of multinational concerns in joint exercises and a frank evaluation of our ability to share battlespace awareness with multinational partners we will continue to refine methods for sharing battlespace awareness. Finally, by applying these steps during multinational operations we will improve the development of battlespace awareness and the effectiveness our operations.

None of these problems are new, but the movement towards new operational concepts and high technology command and control systems has exacerbated them. The necessity to

share battlespace awareness is increasingly difficult and more crucial than ever to the effective employment of forces. Although reoccurring problems plague multinational operations, commanders who are aware of these problems and take steps to mitigate them can improve the development of shared battlespace awareness needed to effectively conduct these operations. Additionally, by increasingly emphasizing these issues in joint education, by evaluating and improving our ability to develop shared battlespace awareness during joint exercises, and by applying the lessons learned in multinational operations we will see an improvement in our multinational operational effectiveness.

NOTES

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[14] James J. Cooke, 100 Miles from Baghdad (Westport, CT: Praeger 1993), 57-62.
[15] U.S. Pacific Command, "Joint Mission Force 'Top 10 Challenges'," slide from briefing to CINC U.S. Pacific Command, Camp Smith, HI: 18 April 2000.
[16] Personal experience of the author as a member of the CJTF-Kuwait staff.
[17] Personal experience of the author as a member of the Combined Marine Expeditionary Force staff.
[18] James J. Cooke, 100 Miles from Baghdad (Westport, CT: Praeger 1993), 56.
[19] Clausewitz in "On War" discusses in detail the quality of military genius.
[20] William R. Moore and Kenneth H. Boll Jr., "Intelligence for the Coalition: The Story of Support to Coalition Task Force-Kuwait," Military Intelligence (January-March 1999): 6.
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